

TRADE TALK

Crime buster



As a PhD student, Kevin Chong studied microorganisms in Antarctica. Now, he's a forensic scientist at the DNA Profiling Laboratory, part of the Singaporean government's Health Sciences Authority, where he helps

investigators to solve crimes.

What do forensic scientists do?

It's similar to what is portrayed in the US TV series *CSI: Crime Scene Investigation*. Forensics is the application of science in the legal arena, and a forensic scientist in the biological sciences examines crime-scene evidence for biological fluids, such as blood or semen, and tries to obtain a DNA profile from them.

What happens next?

We match the profiles to those of convicted offenders in our database. This does not mean that a given person is the suspect — they could be the victim, or unrelated to the case. Law-enforcement agencies determine involvement.

Did you plan to go into forensic science?

No. When I was an undergraduate student, my research supervisors had PhDs, which influenced me to follow their paths. So I applied to labs that were working on projects that fascinated me, such as on microorganisms that thrive in harsh environments.

Why did you leave academia?

Pushing the boundaries in science often requires serendipity and time — which can be fleeting in a pressure-cooker environment focused on producing paper-worthy results.

How does your lab differ from academia?

The focus is on quality assurance. In academia, there are quality controls in every experiment. But we go beyond that here. Our lab's staff members have to be proficiency-tested annually to ensure that we can perform tests to produce a reliable result. Analysts have to review all forensic work and tests. And you can't use expired chemicals. That was a shock — in my PhD lab, no one cared about expiry dates.

What have you learnt in this job?

Science and those practising it should be neutral. We want the evidence to speak for itself. ■

INTERVIEW BY JULIE GOULD

This interview has been edited for length and clarity.

outreach, as well as in partnerships, to bolster international-student mobility. “The biggest misconception is that the UK is not as welcoming as it once was,” says Anthony Manning, dean for internationalization at the University of Kent, UK.

Some predict that a drop in the value of the pound after the Brexit vote could even boost the number of applications to UK institutions from students outside Europe. “The biggest driver of non-EU student interest is that the pound is so much weaker, they can benefit from a UK education at a much more affordable price,” says Paul Raybould, marketing director for Hobsons. But that would happen only if the United Kingdom presents itself as welcoming to immigrants, he adds.

TRADING PLACES

Universities in Canada and Australia are capitalizing on the fallout, as they watch their international-application rates climb. Institutions in both nations have striven for the past several years to maintain their image as premier choices for international graduate students, touting their open immigration policies, easy access to work permits and friendly citizenship pathways.

The strategy seems to be succeeding. In 2016, Australia hosted almost 145,000 international graduate students — an increase of 31% over 2014 numbers. Enrolment of students in science, technology, engineering and mathematics grew at even higher rates, including those in engineering (48%), health (42%) and information technology (40%), over that two-year period, according to Christopher Ziguras, president of the International Education Association of Australia and international deputy dean for RMIT University in Melbourne, where he also does research on international studies. “It's no accident we're seeing rapid growth here now,” says Ziguras. Under Australia's student-visa policy, adopted in 2011, master's and PhD students can stay in the country for three and four years, respectively, after graduation. “Compared with tightening processes in the US and UK, it's relatively easy for doctoral graduates to obtain permanent residency in Australia,” says Ziguras.

Canada has also worked to draw international graduate students, who numbered about 44,000 at the last count, according to Universities Canada. Providing a pathway to citizenship makes Canada an attractive option, notes Leah Nord, director of stakeholder relations at the Canadian Bureau for International Education in Ottawa. For example, Nord says, 20–27% of international students since the 1990s became permanent residents in the 10 years after their first study permit was issued. Last November, the nation adopted policies to further ease international students' pathway to citizenship.

Sofia Solar Cafaggi from Mexico hopes to

benefit from the nation's open-arms practices. She earned a bachelor's degree in chemical engineering from McGill University in Montreal, Canada, in 2012, and a joint master's in translational medicine from the University of California (UC), Berkeley, and UC San Francisco in 2014. For medical school, she had a choice of attending the Cleveland Clinic in Ohio at no charge, or to pay her own way at the University of Toronto. She opted for Toronto, despite the cost, because she will be eligible for Canadian citizenship after three years. “In the US, I would have stayed an alien for at least the next decade, and that made me nervous about career prospects given the current political drama,” she says. “In Canada, at the end of the four-year programme, I should be a citizen. To me, that made a world of difference.”

For similar reasons, French national Marius Poyard chose Canada's University of Sherbrooke for a master's programme in mechanical engineering, rather than his US options — Michigan State University in East Lansing or Manhattan College in Riverdale, New York. The Canadian university is much less expensive, he says, and came with no immigration obstacles. “The lower cost and ease of the visa procedure in Canada were the big factors I considered,” he says. “And I prefer to be in a more welcoming country.”

The University of Toronto is benefiting from its own and the nation's open-door policy: it received 27% more international-student applications for 2017 for a total of 15,000, compared with 11,951 in 2016. Although the largest increases came from India and nations in the Middle East, applications from US students rose 26% during that period. “It is all a boon,” says Ted Sargent, the university's vice-president for international affairs.

But if the shift continues, it could prove disastrous for UK and US institutions — financially and in terms of intellectual capacity. “If they stop coming,” says Anita Gopal, international officer for the US National Postdoctoral Association in Rockville, Maryland, “some programmes will simply collapse.” ■

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